Jeremy Lacomis

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Education

Carnegie Mellon University .... Pittsburgh, PA, USA

2017 – 2023 Doctor of Philosophy in Software Engineering. Thesis: Automatically Annotating Decompiled Code with Meaningful Names and Types
Advisors: Claire Le Goues and Bogdan Vasilescu

University of Virginia .... Charlottesville, VA, USA

2015 – 2017 Bachelor of the Arts in Computer Science

Piedmont Virginia Community College .... Charlottesville, VA, USA

2010 – 2015 Associate of Science in Computer Science

Employment

Carnegie Mellon University .... Pittsburgh, PA, USA

2023 – 2025 SCS Mark Stehlik Postdoctoral Teaching Fellow, Software and Societal Systems Department

GrammaTech .... Ithaca, NY, USA

2019 Research Intern

Teaching

3 courses taught as an instructor of record, with an additional 2 semesters as a teaching assistant.

17-214/514: Principles of Software Construction
Instructor of Record Fall 2024
Introductory course focusing on creating software at scale. Topics include concepts of design for complex systems, object-oriented programming, static and dynamic analysis for programs and concurrent and distributed software.

17-214/514: Principles of Software Construction
Instructor of Record Spring 2024

17-214/514: Principles of Software Construction
Instructor of Record Fall 2023

17-355/655/819: Program Analysis
Teaching Assistant Spring 2020
Course on automated program analysis techniques for assuring program correctness. Including static analysis, dynamic analysis, and symbolic execution.

15-300: Research and Innovations in Computer Science
Teaching Assistant Fall 2018
First part of a two-course sequence that prepares students to invent the future state-of-the-art in the field of computer science.

Publications & Talks

Refereed Conference Publications

[C6] Yuwei Yang, Skyler Grandel, Jeremy Lacomis, Edward J. Schwartz, Bogdan Vasilescu, Claire Le Goues, and Kevin Leach. "A Human Study of Automatically Generated Decompiler Annotations". In: *International Conference on Dependable Systems and Networks*. 2025.

[C5] Luke Dramko, Jeremy Lacomis, Edward J. Schwartz, Claire Le Goues, and Bogdan Vasilescu. "A Taxonomy of C Decompiler Fidelity Issues". In: *USENIX Security Symposium*. 2024.

[C4] Qibin Chen, Jeremy Lacomis, Edward J. Schwartz, Claire Le Goues, Graham Neubig, and Bogdan Vasilescu. "Augmenting Decompiler Output with Learned Variable Names and Types". In: *USENIX Security Symposium*. 2022.

[C3] Qibin Chen, Jeremy Lacomis, Edward J. Schwartz, Graham Neubig, Bogdan Vasilescu, and Claire Le Goues. "VarCLR: Variable Semantic Representation Pre-training via Contrastive Learning". In: *International Conference on Software Engineering*. 2022.

[C2] Jeremy Lacomis, Pengcheng Yin, Edward J. Schwartz, Miltiadis Allamanis, Claire Le Goues, Graham Neubig, and Bogdan Vasilescu. "DIRE: A Neural Approach to Decompiled Identifier Naming". In: *International Conference on Automated Software Engineering*. 2019.

[C1] Alan Jaffe, Jeremy Lacomis, Edward J. Schwartz, Claire Le Goues, and Bogdan Vasilescu. "Meaningful Variable Names for Decompiled Code: A Machine Translation Approach". In: *International Conference on Program Comprehension*. May 2018.

Books and Chapters

[B1] Jeremy Lacomis, Jonathan Dorn, Westley Weimer, and Stephanie Forrest. "Automatically Reducing Energy Consumption of Software". In: *The Energetics of Computing in Life and Machines*. Ed. by David H. Wolpert, Chris Kempes, Peter F. Stadler, and Joshua A. Grochow. The SFI Press, 2019.

Refereed Journal Articles

[J2] Luke Dramko, Jeremy Lacomis, Pengcheng Yin, Edward J. Schwartz, Miltiadis Allamanis, Graham Neubig, Bodan Vasilescu, and Claire Le Goues. "DIRE and its Data: Neural Decompiled Variable Renamings with respect to Software Class". In: *Transactions on Software Engineering and Methodology* (2022).

[J1] Jonathan Dorn, Jeremy Lacomis, Westley Weimer, and Stephanie Forrest. "Automatically Exploring Tradeoffs Between Software Output Fidelity and Energy Costs". In: *Transactions on Software Engineering* (2017).

Refereed Workshop Publications

[W3] Alexander G. Shypula, Pengcheng Yin, Jeremy Lacomis, Claire Le Goues, Edward J. Schwartz, and Graham Neubig. “Learning to Superoptimize Real-World Programs”. In: *Deep Learning for Code Workshop*. 2022.

[W2] Afsoon Afzal, Jeremy Lacomis, Claire Le Goues, and Christopher S. Timperley. “A Turing Test for Genetic Improvement”. In: *Genetic Improvement Workshop*. May 2018.

[W1] Jeremy Lacomis, Alan Jaffe, Edward J. Schwartz, Claire Le Goues, and Bogdan Vasilescu. “Statistical Machine Translation is a Natural Fit for Identifier Renaming in Software Source Code”. In: *Statistical Modeling of Natural Software Corpora, 2018 AAAI Workshop*. 2018.

Formal Presentations

Note: Excludes conference presentations.

- “DIRE: Renaming Variables in Decompiled Code with Neural Nets” At: *CactusCon*. 2019.
- “Constraint-Guided Statistical Type Reconstruction for Decompilation”. At: *In-Vivo Analytics for Big Software Quality*. 2018.

Professional Development

Creating a Welcoming and Supportive Climate from Day One
Carnegie Mellon University 2024
Attended a seminar on creating an inclusive classroom climate from the start of a course.

Teaching Strategies for Effective Note-Taking
Carnegie Mellon University 2024
Attended a seminar on facilitating strategies to allow students to take effective notes.

Honors and Awards

2022	Distinguished Paper Award, USENIX, for *Augmenting Decompiler Output with Learned Variable Names and Types*
2022	Best Paper Award, Deep Learning for Code Workshop, for *Learning to Superoptimize Real-World Programs*

Professional Service and Affiliations

Local Service at Carnegie Mellon University

2020-2023	Member, ISR DEI Committee
2020	Mentor, SCS Graduate Application Support Program
2019-2023	Selection Committee Chair, REUSE@CMU

Journal Referee

2024	Automated Software Engineering

Software Artifacts

DIRE: Decompiled Identifier Renaming Engine
A tool for renaming variables in decompiled code using neural networks.
DIRTY: DecompIled variable ReTYper
A tool for renaming and retyping variables in decompiled code using transformers.

References

Primary reference: Claire Le Goues
Professor of Computer Science at Carnegie Mellon University (clegoues@andrew.cmu.edu)

Additional references available upon request.